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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,368

03/28/2005

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EXAMINER

CHOWDHURY, AFROZA Y

ART UNIT

PAPER NUMBER

2629

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,368

Applicant(s)

KANG, BYUNG-GEUN

Examiner

Afroza Y. Chowdhury

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) 2, 3, and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/28/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 2, 3 and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species II and III, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on June 21, 2007.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 5–7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Pub. 2003/0112220) in view of Stern et al. (US Patent 5,013,128).

As to claim 1, Yang et al. discloses a pen type optical mouse for displaying a pointer or cursor on a computer monitor at a desired position in accordance with a movement thereof detected using a reflected light, the optical mouse comprising:

a pen-shaped mouse body (fig. 4, 15, 19);

a transparent optical tip member (fig. 15(50), page 8, [0107]) mounted to one end of the mouse body;

an illuminating unit (fig. 4(11), page 4, [0056]) mounted in the mouse body, and adapted to irradiate light through the optical tip member onto a reflection surface arranged outside the mouse body,

the illuminating unit including a light emitter (fig. 4(11), page 4, [0058]),

an light guide for guiding light (fig. 4(12), 9(12), page 4, [0059], page 6, [0061]) emitted from the light emitter,

and a prism (fig. 5(13b), fig. 6(13c), page 6, [0085] – [0086]);

a condenser lens (fig. 5, 6(13a), page 6, [0085], imaging lens) mounted in the mouse body, and adapted to allow light reflected from the reflection surface to pass there through;

an imaging unit (fig. 4, 5, 6(13)) forming an image;

an image sensor (fig. 4, 5, 6(14), page 4, [0061]) for receiving light outputted from the imaging unit,

converting the received light into an electrical signal (page 4, [0061]);

and a microcomputer (fig. 4, 5, 6(15), page 7, [0091] – [0093]) control means) for analyzing pattern information of the reflection surface inputted to the image sensor, based on the electrical signal outputted from the image sensor, detecting a moving direction and distance of the mouse, based on the analyzed pattern information, and transmitting information about the moving direction and distance to a computer body.

Yang et al. does not teach use of optical fiber to guide light.

Stern et al. teaches a fiber optic light guide (fig. 1(10, 12)).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to incorporate the fiber optic light guide of Stern et al. into the pen type optical mouse of Yang et al. to make a pen shaped optical mouse with improved efficiency.

As to claim 5, Yang et al. teaches a pen-shaped optical mouse wherein the imaging unit (fig. 4, 5, 6(13)) and image sensor (fig. 4, 5, 6(14)) have optical axes aligned with each other, respectively.

As to claim 6, Yang et al. teaches a pen-shaped optical mouse wherein: the imaging unit (fig. 4, 5, 6(13)) is arranged such that it refracts the light received thereto; and the image sensor (fig. 4, 5, 6(14)) is arranged such that it receives the refracted light from the imaging unit (fig. 4, 5, 6(13)).

As to claim 7, Yang et al. discloses a pen-shaped optical mouse comprising:

- a first click button (fig. 4(17)) adapted to sense a depression of the optical tip member, the first click button being clicked when it senses the depression of the optical tip member;

- and a second click button (fig. 4(18)) mounted to an outer surface of the mouse body such that it is clicked when it is depressed by a user's finger.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Pub. 2003/0112220) in view of Stern et al. (US Patent 5,013,128) and in further view of Badyal et al. (US Patent 6,151,015).

As to claim 4, Yang et al. (as modified by Stern et al.) teaches a pen-shaped optical mouse including a light emitter.

Yang et al. (as modified by Stern et al.) does not explicitly teach whether the pen-shaped optical mouse comprises an LED.

Badyal et al. teaches the use of LED (col. 2, lines 15-18) in a pen like pointing device.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to incorporate the pen like pointing device of Badyal et al. into the pen-shaped optical mouse of Yang et al. (as modified by Stern et al.) to make a pen-shaped optical mouse in order to make it durable.

4. Claims 8–11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Pub. 2003/0112220) in view of Stern et al. (US Patent 5,013,128) and in further view of Gregg et al. (US Patent 5,963,195).

As to claim 8, Yang et al. (as modified by Stern et al.) discloses a pen-shaped optical mouse comprising a wheel switch (fig. 4(18)) to perform scroll function.

Yang et al. (as modified by Stern et al.) does not explicitly teach a wheel button sensor adapted to perform a scroll function.

Gregg et al. teaches a wheel (col. 5, lines 2-9) fitted in an opening formed at a side wall of the mouse body such that it is rotatable about an axis thereof, while being partially protruded from the opening in an outward direction of the mouse body, the wheel having a plurality of through holes extending axially throughout the thickness of the wheel while being circumferentially arranged;

a light emitter (col. 5, lines 2-9) mounted in the mouse body, and adapted to irradiate light onto the wheel;

and an optical sensor (col. 4, line 65 – col. 5, line 2) adapted to receive light beams from the light emitter passing through respective through holes of the wheel, thereby detecting a rotating direction and angle of the wheel.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to combine the pointer device of Gregg et al. with the pen-shaped optical mouse of Yang et al. (as modified by Stern et al.) to make a pen-shaped optical mouse that will provide better control of scroll function.

As to claim 9, Gregg et al. discloses a pen-shaped optical mouse comprising a wheel button sensor adapted to perform a scroll function, the wheel button sensor including:

a wheel (col. 5, lines 2-9) fitted in an opening formed at a side wall of the mouse body such that it is rotatable about an axis thereof, while being partially protruded from the opening in an outward direction of the mouse body, the wheel

having a plurality of through holes extending axially throughout the thickness of the wheel while being circumferentially arranged,

a light emitter (col. 5, lines 2-9) mounted in the mouse body, and adapted to irradiate light onto the wheel;

and an optical sensor (col. 4, line 65 – col. 5, line 2) adapted to receive light beams from the light emitter passing through respective through holes of the wheel, thereby detecting a rotating direction and angle of the wheel, wherein the first click button is arranged to be clicked when the wheel is depressed.

It is a design choice to make a wheel being always urged by a spring such that it is inwardly retracted into the mouse body against an elastic force of the spring when it is depressed, while being outwardly protruded from the mouse body by virtue of the elastic force of the spring, so that it returns to its original state

As to claim 10 and 11, Yang et al. (as modified by Stern et al.) discloses a pen-shaped optical mouse comprising a contact button sensor adapted to perform a scroll function, the contact button sensor including:

a button (fig. 4(18), in Yang et al.) mounted to a side wall of the mouse body such that it can be touched by a finger of the user grasping the mouse, use of optical fiber to guide light (fig. 1(10, 12), in Stern et al.).

and a light emitter (col. 5, lines 2-9) mounted in the mouse body,

and the position sensor (col. 4, line 65 – col. 5, line 2) adapted to detect motion of the user's finger, based on light information received thereto via the

optical fiber, wherein the first click button is arranged to be clicked when the transparent button is depressed.

It is a design choice to use transparent button and the button being always urged by a spring such that it is inwardly retracted into the mouse body against an elastic force of the spring when it is depressed, while being outwardly protruded from the mouse body by virtue of the elastic force of the spring, so that it returns to its original state.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afroza Y. Chowdhury whose telephone number is 571-270-1543. The examiner can normally be reached on 7:30-5:00 EST, 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-2600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

7/6/2007



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SUPERVISORY PATENT EXAMINER